Chronic Disease Management

AHRQ's Health IT Portfolio. AHRQ's health information technology (health IT) initiative is part of the Nation's strategy to put information technology to work in health care. By developing secure and private electronic health records for most Americans, and making health information available electronically when and where it is needed, health IT can improve the quality of care, even as it makes health care more cost-effective. Since 2004, AHRQ has invested over $260 million in contracts and grants to over 150 communities, hospitals, providers, and health care systems in 48 States to promote access to and encourage the adoption of health IT. These projects constitute a real-world laboratory for examining health IT at work.

This report focuses on the grants in the health IT portfolio that are implementing and evaluating information technologies to improve care for patients with chronic illnesses such as diabetes and congestive heart failure (CHF). These grants were awarded in 12 States—Arkansas, California, Maine, Massachusetts, Montana, New Mexico, New Jersey, North Carolina, Ohio, Oklahoma, Pennsylvania, and Washington—and serve primarily low-income and rural areas.

Chronic illnesses are among the most prevalent, costly, and preventable of all health problems in the United States. Over 90 million Americans suffer from one or more chronic illnesses, leading to 7 of every 10 deaths. The prevalence of chronic illness has significant implications for health care costs, accounting for three-quarters of total national health care expenditures. Nearly all growth in Medicare expenditures can be traced to the one-half of beneficiaries suffering from multiple chronic illnesses.

Health IT can improve the quality of care received by the chronically ill. Findings from AHRQ-funded projects suggest that incorporating health IT systems into care of the chronically ill supports improvements in patient outcomes and experience with the health care system.

- One project worked with State health officials to pilot the capacity of an electronic health record (EHR) system to report key quality indicators relevant to the State's Medicaid population. The project demonstrated that the electronic system was more efficient and timely in reporting of Medicaid data than the current reporting process of abstracting information from paper-based records. As a result of this project's success, the project team is planning to implement the EHR system statewide.

- Another project used a telehealth system to improve the management of wound care in rural areas for patients with diabetes. The system connected home health workers with wound care specialists, allowing real-time consultation for complex wounds and wounds not healing normally. By providing better feedback between patients and providers, the telehealth system not only led to a reduction in the healing times of wounds, but also facilitated better management of diabetes. Over half of the patients were unaware they had diabetes before participating in the telehealth project. Because of increased access to health information, providers were able to properly diagnose and start working with patients to manage this chronic illness.

- Better quality data capture and reporting using EHRs enabled grantees to improve management of chronic illness for the poorest patients by proactively providing needed

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information for caregivers. One grantee customized an EHR system to identify patients whose diabetes was not under control. Using the reports generated by the system, nurse case managers then called patients to provide education and support in management of their diabetes. By the end of the project, patients who had been called by the nurses had improved their health status and were better able to control their diabetes on their own.

Health IT can reduce the costs associated with treatment of chronically ill patients. Findings from AHRQ-funded projects point toward evidence that incorporating health IT in chronic disease management efforts can yield significant cost savings for patients, providers, and payers, including the Centers for Medicare & Medicaid Services (CMS).

- A project spanning three States found that remote monitoring of CHF patients can reduce unnecessary hospitalizations and trips to the emergency department. The project remotely monitored patients with CHF using in-home devices that transmitted data such as weight and blood pressure to a clinical decision support system. When the system detected dramatic changes in a patient's health, the system alerted the patient and providers caring for the patient. When patients called due to these alerts, providers told them whether the changes signaled the need for emergency treatment. Reducing unnecessary trips to the hospital led to cost savings. Patients also reported that the system improved their confidence in managing their disease and reduced errors associated with medication usage.

- Another project involved collaboration with payers, including CMS, to develop a health IT-based reimbursement policy for physicians who used secure messaging to interact with their patients. A pilot program allowed patients to login to a secure portal and send private messages to their physicians; messages generally included questions about the patient's medications or changes in health status. Physicians were reimbursed for responding to those questions using the secure messaging portal. Project investigators concluded that secure messaging can reduce the need for office visits, saving patients transportation costs and payers office visit charges for medical services.

Implementing health IT is not easy. Projects funded by AHRQ experienced technical challenges associated with the installation and integration of various health information technologies.

- There are few commercial systems available off-the-shelf that provide comprehensive functionality to support chronic disease management. Those AHRQ-funded projects that chose to implement commercial systems found that the software often required a significant amount of customization, which resulted in additional investments of time and resources on the part of the provider organization. This barrier might prohibit rapid adoption of IT-enabled disease management systems.

- Usability and system design are also key factors driving the adoption and use of health IT systems. Several AHRQ-funded projects discovered the importance of testing the technology, as systems do not always perform as specified by the developer. Iterative design processes proved successful in eliminating workflow and system issues before the IT was implemented widely in clinical care settings. Continued improvements to the usability and design of health IT systems will help speed their adoption and use.

The AHRQ-funded laboratory of health IT projects is producing valuable, informative lessons for the Nation. The projects are making contributions to the use of health IT in solving the national challenge of chronic disease management and demonstrating the impact of health IT systems. The lessons to date enhance understanding of various IT applications and the challenges associated with implementing them in a wide variety of clinical settings. Outcomes from these projects have the potential to change the U.S. health care system and offer valuable insight for others who look to use health IT applications within their own organizations.

For More Information:

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